

60625
Breccia
117 grams



Figure 1a: Photo of 60625 showing zap pits all sides. NASA S72-44915. Sample is 5 cm across.



Figure 1b: Photo of opposite side of 60625. NASA S72-44911. Cube is 1 cm.

Introduction

Lunar sample 60625 is a white rock, peppered with micrometeorite pits on all sides (figures 1 and 2). It was collected as a rake sample from the area near the Lunar Module where the drill core and drive tubes were taken (see 60600). The composition shows it is plagioclase-rich, but it also has high content of REE (i.e. it is an unusual breccia or impact melt rock).

Petrography

Warner et al. (1976) described a texture with irregular oikocrysts (pyroxene) up to 1 mm, enclosing euhedral plagioclase chadocrysts (figure 4). Some plagioclase is shocked. Ryder and Norman (1980) term this rock a poikilitic impact melt breccia. Hunter and Taylor (1981) found patches of rust

The mineralogy is 65% plagioclase (An_{95}), 17% olivine (Fo_{77}) and 16% pyroxene ($Wo_7En_{75}Fs_{18}$) with minor ilmenite, armalcolite, Ni-Fe metal, and K-rich phase (Warner et al. 1976).

Chemistry

60625 has been analyzed by Fruchter et al. (1974) (figure 3).

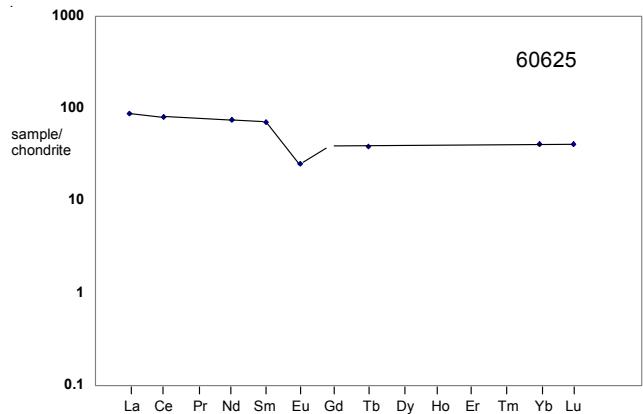


Figure 3: Normalized rare-earth-element diagram for 60625 (data from Fruchter et al. 1974).

Table 1. Chemical composition of 60625.

	60625		
reference	Fruchter74	Warner76	
weight			
SiO ₂ %	45.3	(b)	
TiO ₂	0.32	(b)	
Al ₂ O ₃	25.9	(a) 29.6	(b)
FeO	5.4	3.7	(b)
MnO		0.04	(b)
MgO		3.3	(b)
CaO		17.1	(b)
Na ₂ O	0.49	(a) 0.47	(b)
K ₂ O		0.05	(b)
P ₂ O ₅		0.04	(b)
S %			
sum			
Sc ppm	9.7	(a)	
V			
Cr	840	(a)	
Co	27	(a)	
Ni			
Cu			
Zn			
Ga			
Ge ppb			
As			
Se			
Rb			
Sr			
Y			
Zr			
Nb			
Mo			
Ru			
Rh			
Pd ppb			
Ag ppb			
Cd ppb			
In ppb			
Sn ppb			
Sb ppb			
Te ppb			
Cs ppm			
Ba	190	(a)	
La	20.7	(a)	
Ce	49	(a)	
Pr			
Nd	34	(a)	
Sm	10.5	(a)	
Eu	1.4	(a)	
Gd			
Tb	1.4	(a)	
Dy			
Ho			
Er			
Tm			
Yb	6.7	(a)	
Lu	1	(a)	
Hf	6.3	(a)	
Ta	0.7	(a)	
W ppb			
Re ppb			
Os ppb			
Ir ppb			
Pt ppb			
Au ppb			
Th ppm	4.1	(a)	
U ppm			
technique:	(a) INAA, (b) broad beam e-probe		

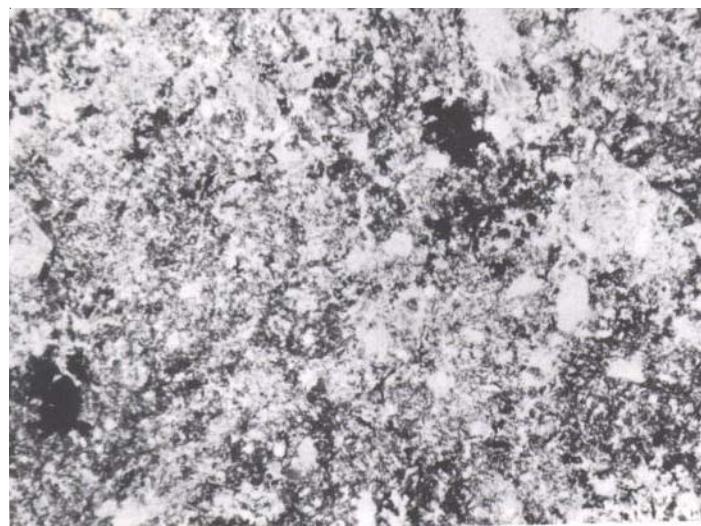


Figure 4: Photomicrograph of thin section showing poikilitic texture of 60625 (from Warner 1976)

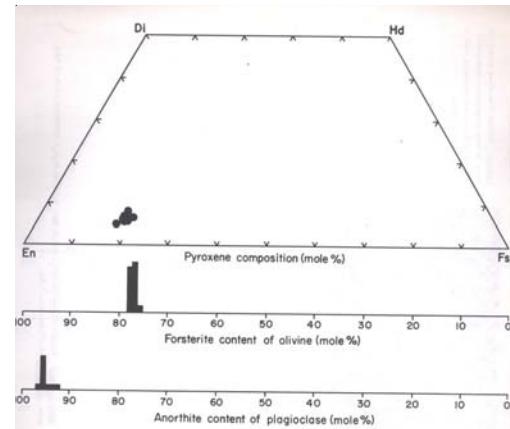


Figure 5: Mineral composition diagrams for 60625 (from Warner et al. 1976).

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